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ABSTRACT

This paper describes efforts at East Carolina University (North Carolina) to develop a survey instrument and related procedures to assess distance learning courses. The survey was conducted during the 1998-99 academic year via the World Wide Web and combined the Student Opinion of Instruction Survey (SOIS) with additional questions that assessed the extent to which graduate-level distance education courses met Quality Assurance Standards for Distance Learning. This initial survey achieved a response rate of only 20 percent due to such factors as student's poor knowledge of the university's e-mail accounts, inadequate university help facilities, and time demands on respondents. However, the survey instrument itself proved successful in that all respondents answered all of the questions and none had negative comments about it. Modification of the survey and its re-administration in spring 1999 resulted in a 43 percent response rate, extensive comments, and general student satisfaction with distance education courses and the survey instrument. Findings highlight the difficulty of reaching distance education students with a Web-based survey, the complexity of developing an appropriate survey, and the need to address campus political problems in developing Web-based surveys. (DB)

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Assessing Distance Learning Using a Website Survey

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This paper was presented at the Thirty-Ninth Annual Forum of the Association for Institutional Research held in Seattle, Washington, May 30-June 3, 1999.
This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of AIR Forum Papers.

Dolores Vura
Editor
Air Forum Publications

Assessing Distance Learning Using a Website Survey

This paper describes the efforts at East Carolina University to develop a survey instrument and related procedures to assess distance learning courses. The survey was conducted during the 1998-99 academic year via the World Wide Web and combined the Student Opinion of Instruction Survey with questions developed by the ECU Graduate School that assessed the extent that graduate-level courses met Quality Assurance Standards for Distance Learning. The standards apply to graduate courses with a distance learning component that comprise 25% or more of the total allocated hours of the course.

This paper describes: (1) the need to develop assessment tools for distance learning courses and provide other background information; (2) the ECU assessment instrument; (3) the implementation procedures using the World Wide Web; and (4) the survey results; and provides conclusions about the processes used.

Assessing Distance Learning Using a Website Survey

I. The need to develop assessment tools for distance learning classes.

The rapid expansion of distance education in recent years has increased concerns that quality standards and assessment techniques are developed. Some of these concerns arise through the accreditation process. A recent report prepared for the council for Higher Education Accreditation provided the following policy agenda for the accreditation community regarding distance education:[1]

- *Establish reliable and valid performance measurements for distance learning;*
- *Require providers to substantiate evidence of contact between faculty and students;*
- *Require evidence of effective instructional techniques;*
- *Promote systematic efforts for selecting and training faculty;*
- *Assure the availability of learning resources;*
- *Promote ongoing monitoring and enhancement of the technology infrastructure of institutions;*
- *Focus attention on the development of courseware and the availability of information; and*
- *Examine alternatives to the traditional accreditation process.*

East Carolina University, like other institutions, is offering a growing number of courses that are taught using one or more distance learning techniques (Internet, Interactive video, Recorded video, etc.). Most of these have been graduate courses, although a growing number of undergraduate courses are also being offered with distance learning techniques.

The ECU Graduate School has been very concerned about establishing procedures to ensure that courses offered via distance learning techniques maintain high quality comparable to courses offered in a traditional classroom setting. (Distance learning courses were defined as courses in which the distance learning component comprises 25% or more of the total allocated contact hours.) A set of standards for distance learning classes was developed and each semester department chairs are required to make a series of assurances to the Graduate School before

[1] Assuring Quality in Distance Learning, A Preliminary Review, a report prepared for the Council for Higher Education Accreditation by the Institute for Higher Education Policy, Washington, DC, April 1998.

offering graduate level distance learning courses. The assurances require that: one faculty member be designated as the "course director;" the prerequisites clearly describe the hardware, software, and technical requirements for the students; adequate library resources be available; and the course be designed so that significant faculty-student and student-student interaction occur within the course. The department chair agrees that the "Quality Assurance Standards for Distance Learning" will be followed including providing an opportunity to the students for end of course assessment.

A set of questions was developed to facilitate student assessment. It was envisioned that these questions would evolve into a standardized assessment tool that would be used by students at the end of the course.

II. The ECU Assessment Instrument

At the time that the Graduate School was developing an assessment tool, other groups on campus (including the Office of Planning and Institutional Research) were expressing concern that the Faculty Senate approved Student Opinion Of Instruction Survey (SOIS) was not completely appropriate for the growing number of distance learning courses (both graduate and undergraduate) and, therefore, not adequately meeting accreditation criteria. Not only were some of the questions inappropriate, but the data collection method (paper forms delivered, completed, and collected in the classroom) was clearly not appropriate for distance learning courses where the students are never assembled at a single time and place. The lack of an appropriate instrument meant that a growing number of distance learning courses were not surveyed by SOIS. Therefore, a number of faculty members were not receiving these data for use in the

personnel decisions affecting them and that the university was not able to assess effectively the quality of instruction of these courses in comparison to more traditional classroom courses.

As a result of these concerns, a campus-wide group was formed to develop a new survey instrument for distance learning courses. This group decided to work together with the Graduate School to develop a single survey instrument that incorporated both Quality Assurance Standards and SOIS questions. Students of graduate distance learning courses would be asked to complete a single end of the course questionnaire, following which the results would be compiled into two reports-- a quality assurance report to the Graduate School, and the standard SOIS report for the instructor.

The resulting questionnaire was 48 questions long and there was concern about the length of the survey. However, in the University of North Carolina system the Sophomore and Graduating Senior surveys are much longer, but have good response rates. Partially because of its length, the survey was divided into six sections: Self Assessment, Instructor Assessment, Course Assessment, Distance Learning Assessment, Overall Course Assessment, and Written Comments. The questionnaire was designed to resemble the appearance of the paper SOIS form. Most of the questions use radio buttons for the responses and questions with the same response scale are grouped into tables. Two of the questions had wordy response choices so we used drop-down lists of response choices.

The response scale was repeated frequently so that it was always visible on the screen. The last three questions are for written comments. Three boxes were provided for written comments. The box provided for the written comment will expand as needed. All of the SOIS questions approved for use in personnel decisions were included, although the wording of a number of the questions had to be modified slightly to make it appropriate for distance learning.

III. Implementation Procedures Using the World Wide Web

Traditional methods of administering the SOIS (administering a paper form during the last full week of classes) are inappropriate for distance learning courses. Sometimes the instructor interacts with the students only via the Internet or other distance learning medium and does not have an opportunity to bring the students together at one time and place to administer a survey. Given this situation conducting a survey via the Web has important advantages:

- Paper forms do not have to be produced, pre-printed with course information, and delivered to the students.
- Results do not have to be scanned. They can be stored directly in a database.
- Responses can be checked for completeness or consistency as the survey is being completed.
- Students can be given the opportunity to record extensive comments.

There are also disadvantages:

- It is nearly impossible to maintain both complete anonymity of results and to ensure that only one survey per each student entitled to participate in the survey.
- There may be some bias introduced by favoring the computer-literate students.
- The survey cannot be administered at a single time and place as with traditional survey techniques.

Decisions had to be made on four critical issues early in the survey design.

(1) How to communicate effectively with the distance learning students in requesting their participation in the survey?

(2) How to provide anonymity of response?

(3) How to control access to the survey to ensure that only those students who are registered for the course are able to complete the survey and that each student submits only one survey?

(4) Where will the survey instrument reside?

Communication with survey population. We chose two methods: (a) Send email messages to the student's ECU email account; and (b) Provide messages to instructors that the instructors would post to the course bulletin board or otherwise deliver to the student.

Anonymity of response is an important characteristic of our standard SOIS. Ideally, we would like to preserve this characteristic in the web-based survey. It was recognized that complete anonymity would be difficult to achieve because of feasibility of tracing the computer from which the survey was submitted. Alternative anonymous identifiers were discussed, including the issuing of random numbers to students by the instructors. Therefore, our office would only have to know which numbers were issued. This idea was rejected this because of the amount of faculty involvement required at a time when faculty are already extremely busy. For this pilot survey, we decided to forego anonymity and simply pledge to the students that (a) their responses would be stored anonymously in a database, (b) the identifiers would only be used for survey control, and (c) survey results would be reported in aggregate form only.

Choice of identifiers for survey control. This was one of the most difficult and important decisions made. Since we decided to forego anonymity, we needed to devise a method of ensuring that only eligible students could participate in the survey and that they can do so only once per course. Our choice of identifier was a combination of the student's email ID and their Personal Identification Number (PIN) that was issued to them. We preferred that to the Social Security Number (SSN) because of security concerns about passing SSN's over the Internet,

and, more importantly, because it may be less threatening to the student. The PINs were anonymous to our office, although we could identify the student through his/her email ID.

Location of the survey instrument. This issue is partially determined by the answer to the anonymity question. If the codes used for survey control are completely anonymous, then the survey can reside on any computer. If, however, you collect easily identifiable information as we did with the student's email ID, then the results should be stored on a secure server to ensure confidentiality. For that reason, we chose a secure server maintained by our computer center rather than our own server where we would have had a greater degree of control.

Procedures followed:

(1) The Graduate School asked each department to identify courses with a distance learning component comprising 25% or more of the total allocated contact hours. Instructors of each course identified were asked to sign a statement that the Quality Assurance Standards would be followed including student assessment of the course. Department chairs were also asked to provide their assurance that the standards would be met by signing at the bottom of the form. The courses for which there were signed forms became the universe of courses to be surveyed.

(2) A code was entered into the survey database to identify each of these courses as distance learning (and therefore not subject to the normal SOIS).

(3) An email message was sent to each instructor explaining the survey procedures and containing an embedded message for the instructors to forward to their students. The student message explained that we would send email messages to their ECU email account on November 30th asking them to complete the survey and to provide a link to the survey website. It explained that they would need both their ECU email ID and their PIN to complete the survey.

(4) As the November survey date approached, we noticed that only about one-third of the survey population had obtained PINs. Instructors were asked to emphasize the importance of accessing their ECU email accounts and obtaining PINs, in order to avail themselves of a rapidly increasing range of on-line student services, as well as to complete the survey.

(5) The email messages were sent November 30 as planned. The messages included a link to the survey website.

(6) When the student clicked on the link, they were sent to a survey entry screen where they were prompted to provide both their ECU email ID and their PIN. They were also given a link to obtain their PIN and as well as an opportunity to send a message to the survey administrator.

(7) If the student's email ID and PIN could not be located in the database, or if they had already submitted a survey, they received a message "Unsuccessful Attempt to Access Survey Instrument" and were given an opportunity to send a message to the survey administrator.

(8) If the student's email ID and PIN were located and had not been used to submit a survey, the database was searched for distance education courses the student was enrolled in and those courses were displayed on a screen.

(9) The student was asked to click on the course to be evaluated, click on the "Survey" button, and be taken to the survey instrument. A "Submit Survey Responses" button is located at the end of the instrument.

(10) If one or more questions were left blank, a screen was displayed that identified the blank questions and asked the student to use the "back" button to return to the survey instrument to complete the unanswered questions.

(11) If all questions were answered, a "Thank You" screen was displayed. The students were asked if they wanted to evaluate another distance learning course. If so, they were taken back to the sign-in page where they were prompted to re-enter their email ID and PIN for security purposes.

IV. Initial Results and Conclusions

When this paper was planned, this section was titled simply "Results and Conclusions." For reasons that will be apparent below, we changed the title to "Initial Results and Conclusions" and added sections titled "Modifications" and "Most Recent Results and Conclusions."

Initial results (Fall Semester 1998):

1. We achieved only a 20 percent response rate. This made it impossible to interpret the results as accurate reflections of student opinions for most of the classes surveyed. The low response was a surprise because we were working with graduate students who were computer literate — since most of them were taking their course via the Internet. All of the instructors had been notified that the survey would be conducted and had given their consent (by signing the Graduate School Quality Assurance Standards). The students had been notified of the survey procedures and had been urged to get their ECU PINs.

We learned that the students taking graduate distance education courses are, for the most part, busy adults. One of the reasons that they chose distance education was convenience. These students do not have the time (or patience) to go through a series of procedures in order to complete a survey. They are willing to complete a survey --and willing to provide extensive comment--only if it can be done quickly and easily. We also learned that many of the graduate distance education courses were self-paced and many of the students had completed the course

well before the November 30th survey dates. We also had not considered that we were requesting their attention at one of the busiest times of the year -- just before the Christmas holidays!

2. The survey instrument itself worked beautifully! There was no evidence that the length of the survey was a problem. All of the students who entered the survey instrument answered all questions and most provided extensive comments. There was not a single negative comment about the survey instrument.

Initial Conclusions:

1.We needed to develop more of a partnership with instructors since some of them perceived the assessment process as one imposed by the Graduate School and PIR. They did not feel as if they had been adequately consulted in the development of the instrument and procedures (even though many of them had been members of the committees that developed the questionnaire).

2. We needed to improve student access to the survey instrument. The email ID and PIN requirements were too stringent since many of the distance education students did not have (and would not get) a PIN. Many of these students used their own internet provider with its distinct email addresses and did not understand that they had also been assigned an ECU email account upon acceptance as a graduate student.

3. Students were pleased with their distance learning courses. Table 1 shows a summary of the quality assurance questions from the surveys submitted. On a 7-point Likert scale, the average score was 6.0. The overall assessment was either a 6 or 7 for 86 percent of the cases. Over 95 percent of the respondents said they would take another distance education course.

4. Students were not as happy with their instructors in a distance education setting as they were in a classroom setting. (Perhaps they could not enjoy the instructors' magnetic personalities as much!) Several courses that were surveyed as distance learning were also taught by the same instructor in a classroom setting. The instructor received consistently higher scores from students in the classroom setting for all except two questions. The two exceptions were questions about the difficulty of the course-- the students thought the distance education courses were more difficult.

The lower scores for distance education may reflect the higher maturity and experience levels of distance education students. These students may be more discerning than their younger counterparts in classroom settings.

Why did we get such a poor response rate? What went wrong?

1. Poor knowledge of ECU email accounts. Few of the distance education students knew that they had been assigned an ECU email account. Even worse, few of the instructors knew that their students had been assigned an ECU email account. The instructors were all using student-provided home email accounts to conduct the course.

2. Inadequate Communication with instructors. There was evidence that at least some instructors saw this as an extraneous activity that had been imposed on them. Most of the instructors had built into their on-line course their own evaluation surveys (and even then some had trouble getting good response rates).

3. Awkward and difficult process to obtain a PIN. The students had to go through multiple steps to acquire--and then to activate--a PIN. (This process has since been streamlined.)

4. Adequate help facilities were not available to assist distance education students in the process of accessing their email accounts and obtaining PINs.

5. Rigidity. The screen we had established to control access to the survey was unnecessarily rigid. It required that students recognize the difference between email ID and email address, that they type their email ID in upper case letters, and that they enter their PIN as an 8-digit field with leading zeros.

6. Speed. After the student successfully entered their email ID and PIN, the system searched for and displayed the distance education courses that student was enrolled in. This process was, for a variety of reasons, often too slow.

V. Modifications

We restructured the survey process for the Spring 1999 semester to correct for the weaknesses discovered in the first (Fall 1998) pilot survey.

1. Improved partnership with instructors. We held a meeting with instructors early in the Spring 1999 semester to discuss the survey and to seek their advice. The instructors urged us to abandon the use of ECU email accounts and PINs for survey control. (Some instructors, however, had begun to require their students to access their ECU email accounts in order to participate in the course.) Some instructors were even requiring their students to obtain ECU PINs. However, most of the instructors thought that their distance education students had no use for an ECU email account, would never take the time to get a PIN, and would not participate in the survey if they could not do so easily without an ECU email ID or PIN. We also outlined a plan to conduct a test of the revised survey procedures using the instructors as the survey population. The test of the revised procedures will inform the instructors of the process we are

asking their students to use, will seek further advice and comment from the instructors, and ultimately will help to ensure their full cooperation to obtain a good survey response from their students.

2. Improved access to the survey instrument. We decided to use the student ID for survey control. (A 9-digit number required for registration-- usually the student's SSN.) This will make the survey available to those distance education students who have not accessed their ECU email account and/or have not obtained a PIN. We also made it possible to access the survey instrument from the student desktop. The student desktop web-page contains a variety of on-line student services that should be attractive to distance education students.

3. Improved help for distance education students. We created a web page for distance education students to explain several ECU procedures including the distance education survey. It provides information (and links wherever possible) to help on a variety of topics including email accounts and PINs.

4. Fine-tuning. Some further adjustments were made to improve the ease and speed of accessing the survey instrument.

VI. Most Recent Results and Conclusions

The Spring 1999 survey went much more smoothly and provided more useful results.

1. Response rate. The response rate improved to 43%-- much better than the 20% response for the previous semester, but much worse than the 80-85% response from paper forms administered in the classroom.

There was considerable variation in response rates by instructor, suggesting that the instructor's methods for encouraging the students to respond may be the single most important factor. The response rates by instructor ranged from 92% to 4%. We talked with instructors at

both the high and the low ends of the response rates. The instructors with high response rates attributed their success to frequent communication with the students about the importance of student evaluations. In one case, the instructor built the survey into the course as the final step. One instructor made the survey part of the final exam. Confidentiality concerns, however, prevented us from providing the instructor with the names of students who had not responded, and there was less than a 100% response for this course.

Instructors with low response rates pointed to institutional apathy on the part of their students. They pointed out that these are graduate students, usually busy adults, with a loose connection with ECU. Students of one course with an exceptionally low response rate were taking the course through a partnership with other schools and evaluated the course for the other school. Some instructors reported that students with older MAC computers had difficulty accessing the survey instrument. One instructor suggested that we offer alternative procedures whereby the student could download the survey form, fill it out, and mail it to us.

2. Student comments. The respondents took the time to provide extensive comments to the three questions at the end of the survey that requested written answers. This may turn out to be the most useful portion of the survey for instructors.

3. Survey instrument. Once again, the survey instrument itself performed well. We received no complaints about the length of the survey and, as noted above, most respondents provided considerable written comment. There were some positive comments about the appearance and ease of use of the survey instrument.

4. Student satisfaction. Students continued to be pleased with distance education courses--93% of the respondents said they would take another distance education course.

The satisfaction ratings, however, were generally lower than those for the preceding semester. Overall, the average score for all questions (with a 7-point likert scale) asked of all respondents was 5.8, down from 6.0 the preceding semester. More importantly, the percentage of students responding 1 or 2 to the 7-point scale increased from 4.3% to 7.6%. The students rated their own preparation and the instructor 6.0 and 5.9, slightly higher than the preceding semester. They rated the course, the distance learning aspects of the course, and the overall assessment 5.7, 5.7, and 6.1, respectively--slightly lower than the preceding semester. However, none of the differences in ratings between semesters were significant.

VII. Conclusions

The most important conclusion that we want to share with our fellow institutional researchers is the difficulty of reaching distance education students with a web-based survey. This is somewhat counter-intitutive because this is a student population that should be skilled in computer use, and in frequent one-on-one electronic contact with their instructors. However, these students tend to be older, busier, and less attached to the school than their classroom counterparts.

Secondly, we conclude that the survey development will be a much longer process than originally planned. We will need to continue talking with instructors and students and making improvements to the process. For example, we need to improve the process for identifying courses to be surveyed as distance education. Sometimes the courses reported to the Graduate School as distance education were instead taught in a classroom and more appropriately surveyed with traditional paper forms administered in the classroom. We also learned that instructors teaching distance education courses conducted for extension purposes through ECU's

Division of Continuing Studies confused those courses with regular graduate courses taught through their home departments and that process administrators shared in that confusion. This result indicated that internally ECU needs to more clearly distinguish which courses should be surveyed.

Third, we conclude that this survey should be extended to undergraduate distance education courses. It is not clear that the problems encountered with graduate courses will be any worse (or better) with the undergraduate distance education courses that are presently not surveyed at all.

Fourth, we conclude that we should continue to replace traditional paper surveys with web-based surveys with a good deal of caution and with deliberate slow speed. The benefits of web-based surveys are clear -- lower cost, more complete responses, and extensive student comments. The problems, however, are extensive staff time for the developmental phase of the survey, and lower response rates.

Fifth, we also conclude that the political problems of developing web-based surveys for distance education courses will not be inconsiderable. Problems of securing approval from various campus constituencies for new student opinion of instruction instruments, concerns about response rates, concerns about the comparability of the results from traditionally taught courses and distance education, and the resulting uncertainty of impacts for faculty personnel decisions are major issues that ECU faces in the development of its web-based distance education surveys. We doubt we are alone.